complement of EAS equipment."[200] According to TFT, as long as intermediary devices are used with certified legacy EAS devices, it "will insure that EAS messages transmitted by [EAS] Participants will meet the protocol requirements and will further screen incoming messages."[201]

65. EAS equipment manufacturer Trilithic supported use of intermediary devices that meet specific requirements, noting that "[i]ntermediary devices that are (in conjunction with the EAS Encoder/Decoder) capable of handling the Governor Must Carry requirements, and also capable of handling the enhanced text of CAP messages (for Broadcast TV, Cable, and Wireline Video systems) should be allowed."[202] Trilithic also suggested that the Commission revise the definition of intermediary devices to reflect that "some Intermediary devices do not convert CAP to SAME FSK, but rather communicate with the EAS Encoder/Decoder through other (non-audio) means."[203] In making this distinction, Trilithic explained that there are two types of intermediary devices. Specifically, Trilithic stated that "[i]n one case a device can ingest CAP message and produce EAS FSK, Attention Tone, and Voice sufficiently to activate the input circuitry of a connected EAS Decoder" and that "[i]n this case the EAS Decoder does not realize it is connected to a CAP device, and treats the input the same as if it was an 'off-air' monitoring assignment."[204] In the second case, according to Trilithic, "the CAP to EAS Intermediary device and the EAS Encoder/Decoder are designed to work together, allowing the enhanced CAP text, and the Governor's Must Carry flag to be processed by the EAS Encoder/Decoder."[205] As Trilithic further described "Functionally this Intermediary Device and EAS Encoder/Decoder combination can perform as a single, integrated device."[206] In its comments, Trilithic thus makes the distinction between intermediary devices capable of delivering alerts with enhanced CAP functionalities, such as enhanced text, and those that merely extract the legacy EAS data and discard the rest of the alert.

66. Some parties oppose use of intermediary devices on the grounds that these devices do not permit use of CAP's added features. EAS equipment manufacturer Sage, for example, opposed intermediary devices because "the information available to the device that is actually placing the alert on the air is always only the legacy EAS information."[207] According to Sage, "If we were willing to accept legacy EAS as the best we can do, there was no need to move to CAP."[208] Sage further argued, "Legacy EAS is a backup, to be used when CAP isn't available ... [s]tations with true CAP reception can do more."[209] Sage also asserted that use of intermediary devices would degrade EAS performance.[210] In this

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[200] TFT Comments at 2.

[201] *Id.* (*internal footnote omitted*).

[202] Trilithic Comments at 8.

[203] *Id.*

[204] *Id.* at 2.

[205] *Id.*

[206] *Id.*

[207] Sage Comments at 9 (emphasis omitted).

[208] *Id.* at 10.

[209] *Id.*

[210] *Id.* at 9-10 (arguing that (i) because legacy EAS devices "typically only handle one EAS message in memory at a time" whereas "CAP messages can arrive more quickly than [the legacy EAS device] can play them back," the legacy EAS device "can drop CAP originated EAS messages"; (ii) because legacy EAS devices "have no concept of cancellation[,] [a]n intermediary/legacy combination will sometimes put cancelled CAP messages on the air"; (iii) the legacy EAS device "has no way to receive CAP text from the intermediary device," and therefore, "CAP text is unavailable to video crawl or radio text services equipment if driven by the legacy EAS device"; and (iv) (continued....)

regard, Sage noted that the biggest problem with an intermediary device is its inability to handle a mandatory gubernatorial alert.[211] Sage also maintained that intermediary devices are not cost-effective because the aging legacy EAS equipment they perpetuate will fail and have to be replaced in the near future.[212]

67. Notwithstanding the foregoing, Sage acknowledged, "As a practical matter, though, due to budget limitations a station may have to choose between a less-desirable hardware solution and total non-compliance."[213] Sage further observed, "As Intermediary Device products are already on the market, and some have already been purchased, it would be hard to disallow them altogether at this point."[214] Sage concluded, however, that intermediary and legacy EAS device configurations must at least be capable of carrying a mandatory gubernatorial alert and processing the enhanced CAP text for video crawls.[215]

68. Similarly, BWWG opposed intermediary devices on grounds that "[n]o matter what the capability of intermediary CAP converter devices; they all have the effect of 'dumbing down' information-rich CAP EAS messages."[216] According to BWWG , intermediary devices are "at best a patchwork solution that takes that portion of the EAS user experience down a dead end road."[217] BWWG also stated that there are "known problems in legacy EAS vendor products that have embedded printers, keep-alive battery memory, external power supplies and more."[218] BWWG acknowledged that "it may be too late to rectify" the deployment of intermediary devices but argued that "setting a date-certain for retirement of legacy EAS equipment must be done."[219]

69. Monroe asserted, "'Intermediary devices may be defined as those which receive CAP messages and encode the content into to EAS protocol tones."[220] Monroe argued that "if uncertified CAP-to-EAS encoders meet the specifications under §11.32, and are intended for use in an EAS Participant site for EAS (as described under §11.11), then we feel that they must be type Certified by the FCC as required under §11.34(a) [, and] [i]f uncertified CAP-to-EAS encoders do not meet all the specifications under §11.32, then they should not receive FCC certification, and should not be used for

(Continued from previous page) ———————————————
"Intermediary devices are not currently required to be Part 11 certified"). Sage also argued, "Since Intermediary Devices are not Part 11 certified, and are not required to emit valid EAS messages, the legacy device could be subjected to invalid messages, duplicates, expired messages, and out of area messages to a far greater extent tha[n] has been possible in the past," adding that "[t]his could interfere with the reception of proper messages, especially since legacy devices were required to store only one active message at a time." *Id.* at 11.

[211] *See Id.* at 10.

[212] *See Id.* at 11.

[213] *Id.*

[214] *Id. See also* Sage Alerting Systems, Inc., Reply Comments, EB Docket 04-296 (filed Aug. 4, 2011) at 6 (Sage Reply Comments) ("We don't know how many Intermediary Devices have been sold, but it is too late to mandate against them.").

[215] *See* Sage Comments at 11. *See also* Sage Reply Comments at 6.

[216] BWWG Comments at 22.

[217] *Id.*

[218] *Id.*

[219] *Id.*

[220] Monroe Comments at 13.

EAS."[221]

70. *Decision*. Intermediary devices are stand-alone devices that carry out the functions of monitoring for, receiving, and decoding CAP-formatted messages and converting such messages into a format that can be inputted into a separate, stand-alone legacy EAS device to produce an output that complies with the Part 11 rules.[222] According to Trilithic, it appears that there are two types of intermediary devices, which may generally be described as "universal" intermediary devices and "component" intermediary devices.[223] Universal intermediary devices monitor, acquire, and decode CAP messages, using the relevant CAP data to generate (*i.e.*, encode) the EAS codes (FSK audio tones) and, if present, an audio message, which can be inputted into legacy EAS devices. Because the SAME-formatted message output of the universal intermediary device is functionally equivalent to a SAME-formatted message delivered over the air, it theoretically should be interoperable with all or most legacy EAS decoders. However, because the output of the universal intermediary device is limited to the EAS Protocol – which is all that the legacy EAS device can process – the configuration of a universal intermediary device and legacy EAS device can only generate a SAME-compliant message; it cannot, for example, use the enhanced CAP text for generating a visual display.

71. Component intermediary devices, by contrast, are designed to interoperate with specific legacy EAS device models. Component intermediary devices also monitor for, acquire, and decode CAP messages, but they are designed to enhance the function of specific legacy EAS devices. Accordingly, the output of the combined system configuration of these devices is capable of more than simply generating a SAME-compliant message. As described by Trilithic, such configurations "allow[] the enhanced CAP text, and the Governor's Must Carry flag to be processed by the EAS Encoder/Decoder."[224] According to Trilithic, "[f]unctionally this Intermediary Device and EAS Encoder/Decoder combination can perform as a single, integrated device."[225] The record indicates that integrated CAP-capable EAS devices[226] can be updated via software or firmware to comply with any future changes that might be incorporated into the Part 11 rules, the CAP standard, or the ECIG Implementation Guide.[227] However, it is unclear whether or to what extent a combined system

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[221] *Id.* at 14. Monroe also contended that "if the intermediary device itself decodes a CAP message and converts to SAME protocol compliant messages (for consumption by an EAS decoder), then that intermediary device would appear to clearly fall under the requirements of § 11.32(a), (b), (c) and (d), as well as § 11.34(a)." *Id.* Monroe advocated certification under FEMA's IPAWS Conformity Assessment Program should serve as the basis for FCC certification but cautioned that "the IPAWS Conformity Assessment for CAP converters (a/k/a intermediary devices) was marked by such fundamental and serious omissions that those tests cannot be relied upon to demonstrate full conformance with the ECIG Implementation Guide or CAP standard." *Id.* at 12. In particular, Monroe observed that "the test cases used in the conformity assessment process omitted evaluation of the ability to process a CAP formatted governors must carry message in intermediary devices." *Id.* at 11.

[222] *See Third FNPRM*, 26 FCC Rcd 8149, 8171, para. 45.

[223] *See, e.g.*, Trilithic Comments at 2.

[224] *Id.*

[225] *Id.*

[226] By "integrated CAP-capable EAS devices," we mean self-contained, stand-alone devices that combine the CAP-related functions of decoding CAP-formatted messages and converting such messages into a SAME-compliant output and processing SAME-formatted messages as encoders and decoders in accordance with the Part 11 rules. Because integrated CAP-capable EAS devices handle all of the CAP-related and Part 11 functions within a self-contained unit, they are capable of fully utilizing CAP, such as generating the visual display from CAP's data fields, in conformance with the ECIG Implementation Guide.

[227] *See* Monroe Reply Comments at 5-6.

configuration of a component intermediary device and its companion legacy EAS device model could be similarly updated.

72. Based on the record and the transitional approach we are taking for this proceeding, we will allow, with the limitations described below, EAS Participants to meet their CAP-related obligations by using intermediary devices in tandem with their existing legacy EAS equipment. First, the record indicates that intermediary devices offer a less costly way to meet the requirements we adopt in this order.[228] We understand, as some commenters point out, that any short-term economic benefit that may accrue from purchasing an intermediary device rather than an integrated CAP-capable EAS device may be lost for any number of reasons, such as a complete breakdown of the aging legacy EAS device with which the intermediary device is configured or the inability to update the legacy EAS device to reflect any additional EAS requirements we might adopt in the future.[229] We agree with Verizon, however, that "providers should be able to weigh for themselves the costs and benefits of using intermediary equipment, versus more widespread replacement of EAS equipment."[230] Moreover, it is clear that some percentage of EAS Participants already have purchased and deployed intermediary devices.[231] Therefore, not authorizing the use of intermediary devices would result in significant equipment replacement, installation, and training costs for these EAS Participants.[232] Assuming that these devices meet the certification and other requirements detailed in section IV.C of this order, imposition of the costs associated with the purchase of replacement EAS equipment is unnecessary and unjustified,[233] a point that the parties opposing use of intermediary devices on the basis of their limited capability seem to acknowledge.[234]

73. Second, the idea that intermediary devices ensure that the alert information placed on the air "is always only the legacy EAS information" appears to be inaccurate, at least in the case of component intermediary devices.[235] In any event, as we discuss above, for the time being, we are requiring only the distribution of legacy EAS information because the current EAS architecture is incapable of distributing (via the daisy chain process) anything more. At a minimum, therefore, the information that is generated (encoded) for the benefit of downstream monitoring stations must remain in the EAS Protocol due to technical limitations in the AFSK modulation process. Thus, with respect to the alert information that is generated and broadcast for the benefit of downstream monitoring stations, even EAS Participants with integrated CAP-capable EAS devices will be limited to encoding only the limited

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[228] *See, e.g.*, NAB Comments at 17; Public Television Comments at 4; Prometheus Comments at 1; NCTA Comments at 10-11; Verizon Comments at 4.

[229] *See, e.g.*, Sage Comments at 11.

[230] Verizon Comments at 4.

[231] *See, e.g.*, Public Television Comments at 3-4; Sage Comments at 11; NAB Comments at 18.

[232] *See, e.g.*, Public Television Comments at 4; Verizon Comments at 4.

[233] We agree with Monroe that intermediary devices function as both encoders and decoders within the meaning of 11.34(a) and (b), and are subject to certification on that basis. *See* Monroe Comments at 13-15. However, to the extent Monroe is arguing that intermediary devices must perform *all* of the functions set forth for encoders and decoders in section 11.32 and 11.33, we disagree. Some of these requirements and functions, such as audio inputs and code validation, are handled by the legacy EAS device and would make little sense for the intermediary device, which is merely converting the CAP message into a SAME-compliant message that will be treated like any other SAME-formatted message monitored by the legacy EAS device. As discussed in section IV.C of this order, we have taken these functional nuances into account in the certification requirements we adopt for intermediary devices.

[234] *See, e.g.*, *See* Sage Comments at 11; Sage Reply Comments at 6; BWWG Comments at 22.

[235] Sage Comments at 9 (*emphasis omitted*).

EAS Protocol codes. The only issue, then, is the extent to which CAP message information (beyond just the EAS codes, which are encoded as AFSK tones) can be utilized by the EAS Participant that receives the CAP message (since this information cannot be encoded for further distribution to monitoring stations via the daisy chain process). As detailed in section IV.B(5) of this order, based upon substantial support in the record, we will require EAS Participants to meet the visual display requirements in sections 11.51(d), (g)(3), (h)(3), and (j)(2) using the CAP message's enhanced text, as set forth in section 3.6 of the ECIG Implementation Guide, to the extent that such text is supplied by the alert initiator. The record indicates that component intermediary devices can produce such a visual display.[236]

74. Accordingly, we will allow EAS Participants to meet the CAP-related obligations we adopt in this order by using intermediary devices in tandem with their existing legacy EAS equipment, provided that such configuration can comply with the certification requirements detailed in section IV.C of this order, as well as with any applicable Part 11 requirements we may adopt in the future. Such action is consistent with our baseline goal of ensuring that alert messages formatted pursuant to the CAP-related standards adopted by FEMA will be converted into and outputted as SAME-compliant messages. However, because we also require that EAS Participants utilize the enhanced text in a CAP message to provide a visual display, as set forth in section 3.6 of the ECIG Implementation Guide, we will require that any intermediary devices provide such functionality by June 30, 2015, which is three years from the June 30, 2012, deadline for overall CAP compliance.

75. We recognize that it will likely be technically unfeasible for universal intermediary devices (and possibly some component intermediary devices), as well as the legacy EAS devices with which they are configured to meet this requirement, which means that such equipment would have to be replaced. While we acknowledge that there may be costs involved with replacing non-compliant equipment, we do not believe that such costs are beyond those that EAS Participants may expect in the normal course of business, particularly as much of the underlying legacy equipment upon which intermediate devices depend is old and will soon need to be replaced.[237] Although no commenters discussed specific figures for equipment costs, we believe that the approximately three and one half-year window we are providing for intermediary device users is sufficient to allow EAS Participants to finish depreciating and then

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[236] *See, e.g.*, Trilithic comments at 2. We do not find the technical arguments against intermediary devices raised by Sage compelling. Sage argued that because legacy EAS devices "typically only handle one EAS message in memory at a time," whereas "CAP messages can arrive more quickly than [the legacy EAS device] can play them back," the legacy EAS device "can drop CAP originated EAS messages." Sage Comments at 9. The EAS, however, is inherently not capable of broadcasting more than one alert at a time, and the Part 11 rules do not require storage of multiple EAS messages. Presumably, such storage requirements would be a feature of a CAP-centric, Next Generation EAS. Sage also argues that because legacy EAS devices "have no concept of cancellation[,] [a]n intermediary/legacy combination will sometimes put cancelled CAP messages on the air." *Id.* at 10. While the ECIG Implementation Guide provides for CAP message cancellation (*see* ECIG Implementation Guide, § 3.8.3), there are no provisions in the Part 11 rules for cancelling valid EAS messages, once received, other than the EOM code (and the decoder reset function), which intermediary and legacy EAS devices can process. Sage also argued, "Since Intermediary Devices are not Part 11 certified, and are not required to emit valid EAS messages, the legacy device could be subjected to invalid messages, duplicates, expired messages, and out of area messages to a far greater extent tha[n] has been possible in the past," adding that "[t]his could interfere with the reception of proper messages, especially since legacy devices were required to store only one active message at a time." *Id.* at 11. However, CAP message validity is addressed in the ECIG Implementation Guide, with which intermediary devices will be required to adhere. In addition, weeding out duplicate, expired and out-of-area messages takes place in the legacy EAS device – not the intermediary device.

[237] *See* SAGE comments at 11 (observing that intermediary equipment is only as good as its underlying legacy devices, most of which are old and near the end of their useful life, expressing the belief that intermediate equipment is not cost efficient when all costs are considered, and explaining that most of the hidden costs are the continued use of a non-networked device from last century, which will eventually fail and need to be replaced).

replace this aging legacy EAS equipment and to allow equipment manufacturers time to develop possible workarounds to allow intermediate devices to become compliant with our rules. Among the benefits that CAP-compliant equipment will bring is an EAS that is more accessible to all Americans, including Americans with disabilities, who will directly benefit from this new requirement.[238] We agree with the many commenters that argued that using CAP's capacity for enhanced text would, among other things, help harmonize the EAS rules with the requirements of section 79.2,[239] and thus conclude that requiring intermediate equipment to comply with these rules by June 30, 2015 is justified.

76. We also reiterate that the limited functionality of both intermediary devices and the legacy EAS devices with which they operate may render them unusually susceptible to changes in the Part 11 rules, such as development of new CAP functions and changes to the EAS codes. Whereas the record indicates that integrated CAP-capable EAS devices are easily updateable to evolve with potential changes to the CAP standard and any resulting Part 11 requirements, intermediary devices and legacy EAS equipment may not be so adaptive. Accordingly, there is no guarantee that intermediary or legacy EAS devices will not have to be replaced earlier than integrated CAP-capable EAS devices.[240]

77. *Encoder Requirements.* The functional requirements for EAS encoders are set forth in section 11.32.[241] In the *Third FNPRM*, we sought comment on several CAP-related proposals involving these requirements that were raised by CSRIC and parties responding to the *Part 11 Public Notice*.

78. *Section 11.32(a).* Section 11.32(a) specifies the minimum requirements for encoders.[242] This section requires that encoders be capable of encoding the EAS Protocol set forth in section 11.31, providing the EAS code transmission requirements described in section 11.51, and meeting various other specifications.[243] In the *Third FNPRM*, we explained that CSRIC had recommended that the Commission "[m]odify [the] EAS encoder minimum requirement" so that "EAS encoder[s] [are] capable of [r]endering a fully CAP compliant message."[244] To the extent that CSRIC was proposing that EAS encoders be required to be capable of encoding a CAP-formatted message (*i.e.*, originating or somehow transmitting a message in the CAP format as opposed to the SAME format), we sought comment on whether such a requirement would be necessary or appropriate.[245]

79. Commenters indicated that CSRIC's recommendation was not to require encoding of the CAP message but rather to revise section 11.32(a) to require that encoders are capable of encoding the requisite EAS codes as extracted from a CAP message. Monroe, which indicated it was a member of the CSRIC working group drafting the recommendations. clarified that "[t]he usage of the term 'render' in

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[238] *See, e.g.*, RERC-TA Comments at 14; Wireless RERC Comments at 5; Trilithic Comments at 9.

[239] *See infra* paras. 260-264.

[240] For example, to the extent that legacy EAS devices cannot be updated to process new event or originator codes, any decision to adopt such codes could render existing intermediary and legacy EAS device configurations obsolete. We observe, in this regard, that NWS has requested the addition of a new event code into the EAS Protocol covering extreme wind warnings. *See* National Oceanic and Atmospheric Administration, National Weather Service Letter to Marlene H. Dortch, Secretary, FCC, EB Docket 04-296 (filed Aug. 4, 2011). Although this request is beyond the scope of this proceeding, it is likely to be taken up in a separate proceeding in the near future.

[241] *See* 47 C.F.R. § 11.32.

[242] *See id.* § 11.32(a).

[243] *See id.*

[244] *See Third FNPRM*, 26 FCC Rcd 8149, 8172, para. 49 (*citing CSRIC Final Report*, § 5.1).

[245] *See id.*, para. 50.

[CSRIC's recommendation on section 11.32(a)] was that of 'converting' or 'encoding' a CAP message into EAS protocol output, in compliance with other Part 11 subsections ... [t]he working group did not intend for the Commission to infer that 'rendering' in this instance meant 'originating' or 'authoring' CAP for the purposes of transmitting CAP XML content over broadcast media."[246] Other parties pointed to the infeasibility of encoding anything other than the EAS Protocol components. Trilithic, for example, explained, "Transmitting CAP messages over FSK is not feasible as it could take several minutes, and would have to occur without any audio glitches for the entire transmission."[247] Sage observed, "As the smallest possible CAP message containing EAS is about 13 times larger than a small EAS message, sending a CAP message over a broadcast station with FSK data is not practical."[248]

80. *Decision*. We conclude that it is unnecessary to make any changes to the minimum encoder requirements set forth in section 11.32(a) regarding CAP-to-SAME conversion. The conversion of CAP-to-SAME is primarily a decoding function that CAP-compliant EAS equipment is designed to perform. We are not requiring encoders to encode anything other than the relevant EAS Protocol elements described in section11.31 that they have always been required to encode. This is the case regardless of whether the relevant EAS Protocol elements are derived from a CAP-formatted message or a SAME-formatted message. We could not do otherwise, because, as commenters point out, the EAS encoding (*i.e.*, AFSK modulation) process is incapable of conveying more than the limited EAS Protocol elements currently required.[249] As described above, it is this limitation that largely defines and necessitates our transitional approach.

81. *Section 11.32(a)(2)*. Section 11.32(a)(2) specifies the input configuration requirements for encoders.[250] This section currently requires that encoders be configured with two inputs: one for audio messages and one for data messages (RS–232C with standard protocol and 1200 baud rate).[251] In the *Third FNPRM*, we sought comment on whether we should modify these input specifications to require that an encoder be configured with an Ethernet port and, if so, whether a single Ethernet port would be sufficient to capture data streams from multiple sources and distribution platforms.[252] We also asked whether there are any other types of interface ports, such as a USB port, that we should include in the configuration requirements.[253] We also sought comment on whether we should retain the 1200 baud RS-232C input requirement.[254] Finally, we asked whether any configuration requirements we adopt for encoder inputs also be applied to encoder outputs.[255]

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[246] Monroe Comments at 24. *See also* Timm Comments at 12-13.

[247] Trilithic Comments at 8. *See also* ECIG Implementation Guide at 31 ("None of the enhanced descriptive information at the CAP reception node can be inserted into the EAS FSK audio transmission stream by using the basic standard EAS transmission method." (*italics omitted*)).

[248] Sage Comments at 12. *See also id.* at 23-24 ("EAS does not have the capability of sending the CAP text as part of the EAS message. Even a short message of 500 characters will take 30 seconds of FSK air time when sent in the EAS format.").

[249] For this reason, we must reject RERC-TA's argument that "requiring EAS encoders to be capable of fully encoding CAP-formatted messages (including all message formats) is appropriate." RERC-TA Comments at 12.

[250] *See* 47 C.F.R. § 11.32(a)(2).

[251] *See id.*

[252] *See Third FNPRM*, 26 FCC Rcd 8149, 8173, para. 52.

[253] *See id.*

[254] *See id.*

[255] *See id.*

82. The majority of comments appeared to favor leaving decisions on input configurations to manufacturers, based upon market demand. Sage asserted, "While there is a need to tidy up the various encoder and decoder requirements, these are not near-term problems, and can be deferred until such time as the FCC contemplates removing the EAS requirement all together," adding that "[o]ne example is the deletion of the requirement for a 1200 baud serial port."[256] With respect to requiring data input ports, Sage recommended, "As it is extremely unlikely that a CAP receiver intended for sale to the broadcast industry would be built without an IP port, Sage's recommendation is to not over-specify."[257]

83. With respect to the input configuration requirements of both encoders and decoders, Monroe advised against eliminating the RS232 requirements on grounds that "there are numerous broadcast and cable operations that current[ly] still utilize the RS-232C interface for various applications and services."[258] Monroe added, "At a minimum, the revised rules should not preclude inclusion of RS-232C interface as an option."[259] Monroe further recommended that the input configuration requirements for both encoders and decoders "include a requirement for at least one Ethernet port."[260]

84. BWWG suggested there is "value in continuing RS-232 connectivity (and possibly encouraging USB connectivity) as additional ways to communicate, control and update CAP EAS devices."[261] BWWG also maintained that "the ultimate decision to incorporate USB ports should be left to manufacturing stakeholders" and added that "the rules [should] be written in such a way to encourage development of future improvements."[262] According to BWWG, "as long as a single Ethernet port can be internally configured to poll multiple CAP servers, one port will suffice."[263]

85. Trilithic stated, "While we do not suggest (or discourage) making it a requirement, we expect an Ethernet connection to be the input/output of choice for future (and present) EAS Encoder/Decoders."[264] Regarding the RS232 requirement, Trilithic commented, "We do not see any utility in the mention of RS232C connections (and 1200 BAUD format) in the current regulations, with or without the addition of other input/output requirements" and suggested the "complete removal of references to RS-232 communications."[265]

86. *Decision*. We agree with commenters that decisions concerning the total number and types of data input ports configured into encoders are best left to equipment manufacturers, so that they can respond to both the monitoring requirements of the CAP systems with which EAS equipment may interface (such as IPAWS and state CAP systems), changes in technology, and costs of compliance. We also believe that, for the sake of consistency with our transitional approach, the input configuration requirements should continue to require audio and data connectivity. Accordingly, we are revising section 11.32(a)(2) to require at least one audio input port and at least one data input port. We are also

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[256] Sage Comments at 12.

[257] *Id. See also* NAB Comments at 18-19.

[258] Monroe Comments at 25 (*emphasis omitted*).

[259] *Id.*

[260] *Id.* (*emphasis omitted*).

[261] BWWG Comments at 25.

[262] *Id. See also* NAB Comments at 18-19.

[263] BWWG Comments at 25.

[264] Trilithic Comments at 8.

[265] *Id.*

deleting as unnecessary under this minimal requirement references to RS232-C and 1200 baud rate, which manufacturers may continue to make available, if they so desire. Finally, we will apply this minimal requirement of at least one audio port and at least one data port to the encoder output port configuration requirements in section 11.32(a)(3), because the rationale above applies equally to the output ports and the record strongly supports such application.[266] Because commenters generally supported this outcome, we see no unnecessary cost impact from this requirement.

87. *Decoder Requirements.* The functional requirements for EAS decoders are set forth in section 11.33.[267] In the *Third FNPRM*, we sought comment on certain CAP-related proposals involving these requirements that were raised by CSRIC and parties responding to the *Part 11 Public Notice*.

88. *Section 11.33(a).* Section 11.33(a) specifies the minimum requirements for decoders.[268] This section requires that decoders be capable of decoding the EAS Protocol set forth in section 11.31, providing the EAS monitoring functions set forth in section 11.52, and meeting various other specifications.[269] In the *Third FNPRM*, we sought comment on whether the minimum requirements for decoders in this section should include the capability to decode CAP-formatted messages and convert them into SAME protocol-compliant messages, as set forth in section 11.56, and whether this requirement can be met through the deployment of an intermediary device.[270] We observed that the fundamental purpose of decoders is processing EAS messages, whether formatted in the SAME or CAP protocols, and adding CAP reception to section 11.33(a) would put CAP on the same footing as SAME.[271]

89. Commenters generally supported adding a CAP-to-SAME conversion requirement to section 11.33(a). Trilithic stated, "Given the current requirement to receive CAP formatted messages, we do suggest that receiving CAP formatted message[s] and converting them to EAS Protocol Text should be added to the Decoder section of the Commission[']s rules," adding that "[u]se of intermediary devices should be allowed, at least for currently designed EAS Encoder/Decoders."[272] TFT asserted, "Current decoders and intermediary devices should be required to conform to the current ECIG implementation Guide."[273] Monroe agreed that the minimum requirements for decoders in section 11.33(a) "should include the capability to decode CAP-formatted messages and convert them into SAME protocol-compliant messages, as defined in the ECIG CAP-to-EAS Implementation Guide."[274] Monroe also maintained, however, that it is not "convinced that this requirement can be fully met through the deployment of an intermediary device."[275]

90. *Decision.* We are revising the minimum requirements for decoders in section 11.33(a) to include the capability to decode CAP-formatted messages and convert them into SAME protocol-compliant messages, as set forth in section 11.56 (which will require conformance to the ECIG

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[266] *See, e.g.*, Monroe Comments at 25.

[267] *See* 47 C.F.R. § 11.33.

[268] *See id.* § 11.33(a).

[269] *See id.*

[270] *See Third FNPRM*, 26 FCC Rcd 8149, 8173-74, para. 54.

[271] *See id.*

[272] Trilithic Comments at 8.

[273] TFT Comments at 3.

[274] Monroe Comments at 14.

[275] *Id.*

Implementation Guide) and clarify that this requirement can be met through the deployment of an intermediary device. As we observed in the *Third FNPRM*, the fundamental purpose of decoders is to ingest and process EAS messages, whether formatted in the SAME or CAP protocols, and adding CAP reception to section 11.33(a) will put CAP on the same footing as SAME.[276] Commenters addressing this issue all supported this approach. We also find it appropriate to clarify in section 11.33(a) that intermediary devices may be used to meet the fundamental decoder requirement of converting CAP messages into SAME-compliant messages. Because this requirement does not impose a new technical obligation, we believe the cost impact will be minimal.

91. *Section 11.33(a)(1).* Section 11.33(a)(1) specifies the input configuration requirements for decoders.[277] This section currently requires that decoders be configured with "the capability to receive at least two audio inputs from EAS monitoring assignments" and one data port (RS–232C with standard protocol and 1200 baud rate).[278] In the *Third FNPRM*, we sought comment on whether we should modify these input specifications to require that a decoder be configured with an Ethernet port and, if so, whether a single Ethernet port would be sufficient to capture data streams from multiple sources and distribution platforms.[279] We also asked whether there are any other types of interface ports, such as a USB port, that we should include in the configuration requirements.[280] We further sought comment on whether we should retain the 1200 baud RS-232C input requirement.[281] Finally, we asked whether any configuration requirements we adopt for decoder inputs should also be applied to decoder outputs.[282]

92. Commenters' responses on the issues related to input (and output) configurations applied to both decoders and encoders, and as described above, they generally favor leaving decisions on such configurations to manufacturers, based upon market demand.[283] Trilithic, for example, maintained, "Current decoders should not be mandated to have an Ethernet port."[284] With respect to the RS-232C issue, Trilithic observed, "Data ports are dynamic," adding that "'RS-232C' is certainly obsolete [and] 'USB 1.0' is almost obsolete."[285] According to Trilithic, "[t]he [input and output port] description should be kept general enough to provide for the functionality."[286]

93. *Decision*. For the same reasons described above with respect to encoder input configuration requirements, we are revising section 11.33(a)(1) to require at least one data input port (this section already requires the capability to receive "at least two audio inputs").[287] We are also deleting as unnecessary any references to RS232-C and 1200 baud. We are also revising the decoder output requirements in section 11.33(a)(7) to reflect these changes.

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[276] *See Third FNPRM*, 26 FCC Rcd 8149, 8173-74, para. 54.

[277] *See* 47 C.F.R. § 11.33(a)(1).

[278] *See id.*

[279] *See Third FNPRM*, 26 FCC Rcd 8149, 8174, para. 56.

[280] *See id.*

[281] *See id.*

[282] *See id.*

[283] *See, e.g.*, Sage Comments at 12-13; Monroe Comments at 25; NAB Comments at 18-19.

[284] Trilithic Comments at 3.

[285] *Id.*

[286] *Id.*

[287] *See* 47 C.F.R. § 11.33(a)(1).

94. *Section 11.33(a)(4).* Section 11.33(a)(4) specifies certain visual display and logging requirements for decoders.[288] This section currently requires, among other things, the development of visual display information from the EAS header codes, including the originator, event, location, valid time period of the message, and the local time it was transmitted.[289] This section also requires that existing and new models of EAS decoders manufactured after August 1, 2003, provide a means to permit the selective display and logging of EAS messages containing header codes for state and local EAS events.[290] In the *Third FNPRM*, we sought comment on whether messages derived from CAP per the ECIG Implementation Guide should be added to the log.[291]

95. The commenters responding to this issue supported mandatory logging of text derived from CAP messages. Monroe, for example, stated, "We agreed with the concept that section §11.33(a)(4) should be modified to require that if an alert message is derived from a CAP-formatted message, the contents of the text, assembled pursuant to ECIG Implementation Guide, should be added to the EAS device log."[292]

96. *Decision.* Based on the record, we are amending section 11.33(a)(4) to include selective display and logging of the text that was compiled from CAP-formatted messages.[293] This revision is necessary to harmonize CAP-formatted message processing with SAME-formatted message processing. We observe that our decision is supported by EAS equipment manufacturers, the industry affected by the rule revision, and that the revision imposes no additional technical obligations or costs either to these manufacturers or to EAS Participants.

97. *Section 11.33(a)(10).* Section 11.33(a)(10) specifies certain error detection and message validation requirements for decoders.[294] This section currently requires, among other things, that decoders not relay duplicate messages automatically.[295] In the *Third FNPRM*, we indicated that CSRIC had recommended that this section be revised "to handle duplicate messages [where one is CAP-formatted] and use [the] CAP message by default," as specified in the ECIG Implementation Guide.[296] We also observed that the duplication concerns raised by CSRIC are addressed in the ECIG Implementation Guide.[297] We tentatively concluded that no revisions to section 11.33(a)(10) would be

[288] *See* 47 C.F.R. § 11.33(a)(4).

[289] *See id.*

[290] *See id.*

[291] *See Third FNPRM*, 26 FCC Rcd 8149, 8174-75, para. 57.

[292] Monroe Comments at 25. *See also* BWWG Comments at 26.

[293] We are not specifying in section 11.33(a)(4) that the text to be displayed and logged must have been produced in conformance with the ECIG Implementation Guide, because we are requiring CAP-to-SAME conversion pursuant to the ECIG Implementation Guide in section 11.56. To the extent the visual message compiled from the CAP message is based solely upon the EAS header codes, either because the EAS Participant elected not to follow the enhanced text procedures in section 3.6.4 of the ECIG Implementation Guide or because the EAS Participant employs an intermediary device configured with a legacy EAS device to meet its CAP-related obligations that is incapable of producing such enhanced text, the logged message will look the same as if it had been received in the SAME format. To the extent that the EAS Participant elects to follow the enhanced text procedures in section 3.6.4 of the ECIG Implementation Guide, the logged message will mirror the enhanced text message.

[294] *See* 47 C.F.R. § 11.33(a)(10).

[295] *See id.*

[296] *See Third FNPRM*, 26 FCC Rcd 8149, 8175, para. 58 (*citing CSRIC Final Report*, § 5.1).

[297] *See id.* at 8175, para. 59.

required if we were to require decoding of CAP messages in conformance with the ECIG Implementation Guide.[298]

98. The comments were split on this issue. Monroe, for example, stated that it "concurred with the tentative conclusion that there is no basis for revising section §11.33(a)(10) to require processing of CAP-formatted message[s] by default when duplicate messages are received in both the EAS Protocol and CAP formats if EAS Participants are required to translate CAP-formatted messages into SAME-formatted message[s] in conformance with the ECIG Implementation Guide."[299] BWWG, however, agreed with CSRIC's recommendation to revise section 11.33(a)(11) to require handling of duplicate messages as specified in the ECIG Implementation Guide.[300]

99. *Decision*. We adopt our tentative conclusion set forth in the *Third FNPRM* and decline CSRIC's recommendation to revise section 11.33(a)(10) to require use of the CAP-formatted message where a duplicate SAME-formatted message was also received. As we explained in the *Third FNPRM*, the ECIG Implementation Guide includes a process for handling CAP messages where a duplicate SAME-formatted message also has been received, which prefers (but does not require) use of the CAP version.[301] We are requiring CAP-to-SAME conversion in conformance with the ECIG Implementation Guide, which should satisfy the underlying thrust of CSRIC's recommendation. We also observe, however, that the ECIG Implementation Guide recognizes that in certain circumstances, such as where the audio file associated with a CAP alert cannot be opened, the SAME version of an alert may be preferable to the CAP version.[302] In addition, preferring CAP-formatted messages over duplicate SAME-formatted messages may not be feasible in cases where an intermediary device is used to meet the CAP-related requirements adopted in this order, as the legacy EAS device with which the intermediary device is configured may not be capable of discerning any difference between the CAP-to-SAME converted message it receives from the intermediary device and the SAME-formatted message it receives via its over-the-air monitoring of another station's broadcast. Accordingly, we do not believe it would be reasonable to adopt a generally applicable rule requiring use of the CAP-formatted message in cases where duplicate CAP-formatted and SAME-formatted messages are received, and we decline to do so now. Because this obligation is consistent with the ECIG Implementation Guide, and thus imposes no additional technical obligation, we believe that any costs will be minimal.

100. *Section 11.33(a)(11)*. Section 11.33(a)(11) specifies that a header code with the EAN event code that an EAS Participant receives through any of the audio inputs must override all other messages.[303] In the *Third FNPRM*, we sought comment as to whether we should update this provision to include CAP-formatted messages received through a non-audio input, as EAS Participants will not receive CAP-formatted messages through the audio port.[304]

101. The majority of commenters responding to this issue supported updating section 11.33(a)(11) to include CAP-formatted EAN messages received through a non-audio input. BWWG

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[298] *See id.*

[299] Monroe Comments at 25-26. *See also* Sage Comments at 13.

[300] *See* BWWG Comments at 26. *See also* Trilithic Comments at 8 ("We agree that duplicate messages should be handled in accordance with the ECIG implementation recommendations.").

[301] *See* ECIG Implementation Guide, § 3.11.

[302] *See id.*

[303] *See* 47 C.F.R. § 11.33(a)(11).

[304] *See Third FNPRM*, 26 FCC Rcd 8149, 8175, para. 60.

asserted that "this has to be done to be consistent with the existing Part 11 requirement that EAN messages take absolute and primary priority."[305] Trilithic stated, "The rules should be modified to include CAP messages (EG: 'a message with the EAN event code that an EAS Participant receives through any input must override all other messages')."[306] Sage, however, maintained that "[s]ections dealing with CAP or EAS message handling need not refer to how the CAP or EAS message was acquired in the first place," adding that "the action for an EAN should be the same no matter how it was received."[307]

102. *Decision*. We are revising section 11.33(a)(11) to ensure that EAN messages receive priority over all other EAS messages, regardless of whether the EAN message was received via the audio port or data port, or was formatted in SAME or CAP. This action is necessary because as currently written, section 11.33(a)(11) could be interpreted to require a preference for SAME-formatted EAN messages received via over-the-air broadcast monitoring over duplicate CAP versions of the same message received via the data input port.[308] In any event, we agree with BWWG that such action is necessary to ensure that EAS equipment consistently gives EANs priority, regardless of how it receives them.[309] This is a programming issue that should impose minimal costs, if any.

5. Miscellaneous Rule Changes Related to Fully Implementing CAP

103. *Section 11.1*. Section 11.1 specifies the purpose of the EAS.[310] Among other things, this section provides that "[t]he EAS may be used to provide the heads of State and local government, or their designated representatives, with a means of emergency communication with the public in their State or Local Area."[311] In the *Third FNPRM*, we explained that CSRIC had recommended that we update this section "to include new CAP related alert originators."[312] Accordingly, we sought comment on whether such action is necessary or whether the language currently in section 11.1 is broad enough to capture these entities so that EAS Participants may or must carry their alert messages.[313] The one commenter addressing this issue, BWWG, opposed specifying governors (or their designees) as CAP originators in the rules.[314]

104. *Decision*. We conclude that the existing definition in section 11.1, which covers federal, state, and local government users, and their designees, is broad enough to capture all authorized users of the EAS, whether they initiate SAME-formatted messages or CAP-formatted messages. Accordingly, we decline to revise section 11.1 to include new CAP-related alert originators, as recommended by CSRIC.

105. *Section 11.11*. Section 11.11 identifies the various categories of EAS Participants and

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[305] BWWG Comments at 27.

[306] Trilithic Comments at 9.

[307] Sage Comments at 13.

[308] *See* 47 C.F.R. § 11.33(a)(11) ("A header code with the EAN Event code specified in § 11.31(c) that is received through any of the audio inputs must override all other messages.").

[309] *See* BWWG Comments at 27.

[310] *See* 47 C.F.R. § 11.1.

[311] *Id.*

[312] *See Third FNPRM*, 26 FCC Rcd 8149, 8176, para. 61 (*citing CSRIC Final Report*, § 5.1).

[313] *See id.*

[314] *See* BWWG Comments at 27-28.

specifies their minimum equipment deployment and audio/visual message transmission obligations.[315] In the *Third FNPRM*, we sought comment on whether we should delete the reference to "analog television broadcast stations" from section 11.11, and whether we should amend the text of section 11.11(a) to include as a minimum requirement compliance with the CAP-related requirements in section 11.56.[316] Monroe supported both proposed actions.[317] BWWG supported amending section 11.11(a) to incorporate the CAP-related requirements in section 11.56.[318]

106. *Decision*. We are amending section 11(a) to delete the reference to "analog television broadcast stations" and to include as a minimum requirement compliance with the CAP-related requirements in section 11.56. As we observed in the *Third FNPRM*, the reference to "analog television broadcast stations" is obsolete in light of the fact that since June 13, 2009, all full-power U.S. television stations have broadcast over-the-air signals in digital only.[319] Incorporating the CAP-related obligations in section 11.56 by reference into section 11.11(a) is necessary to put CAP and SAME on an equal footing in Part 11.

107. *Section 11.11 equipment deployment tables*. We sought comment in the *Third FNPRM* on whether, for CAP purposes, we should amend the equipment deployment tables in section 11.11 by adding a footnote to the "EAS decoder" entries in the tables, indicating that EAS Participants may elect to meet their obligation to receive and translate CAP-formatted messages by deploying an intermediary device in addition to the EAS decoder used to decode messages transmitted in the EAS Protocol.[320] We also observed that all of the effective dates identified in the equipment deployment tables have long expired, and as a result, some equipment deployment obligations that once were staggered among EAS Participants now apply equally to all of them.[321] Accordingly, we sought comment on whether we should delete the date references in the equipment deployment tables in section 11.11 (as well as cross-references to these dates in other sections of Part 11, such as section 11.51(c) and (d)), along with the entry for two-tone encoders.[322] We also sought comment on whether the equipment deployment tables covering analog, wireless, and digital cable and wireline video systems could be combined into a single table, as well as any other revisions we could make to section 11.11 to streamline it and make it easier to follow.[323]

108. Monroe recommended "that the text in the table 'Analog and Digital Broadcast Stations' be amended to reflect 'CAP EAS encoder' and 'CAP EAS decoder'."[324] Monroe also recommended that rather than adding a footnote to the "decoder" entries in the equipment deployment tables to clarify acceptance of using intermediary devices to meet decoder requirements, all of these tables be eliminated, and "in their place simply require EAS participants to require a CAP EAS encoder-decoder or CAP EAS decoder."[325] Trilithic asserted, "We believe that all references to expired effective dates should be

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[315] *See* 47 C.F.R. § 11.11.

[316] *See Third FNPRM*, 26 FCC Rcd 8149, 8176-77, para. 63.

[317] Monroe Comments at 26.

[318] BWWG Comments at 28.

[319] *See Third FNPRM*, 26 FCC Rcd 8149, 8176-77, para. 63.

[320] *See id.* at 8177, para. 64.

[321] *See id.*, para. 65.

[322] *See id.*

[323] *See id.*

[324] Monroe Comments at 26.

[325] *Id.* at 14-15.

removed, and when requirements are identical between (previously) separate participant groups, these groups should be consolidated."[326] BWWG agreed generally with all of the proposals except for adding a footnote to decoder entries that would clarify the use of intermediary devices.[327]

109. *Decision*. We are adopting the proposals in the *Third FNPRM* described above. Specifically, we are amending the equipment deployment tables in section 11.11 by adding a footnote to the "EAS decoder" entries in the tables to clarify that the obligation to receive and translate CAP-formatted messages may be met by deploying an intermediary device. As we indicated in the *Third FNPRM*, the equipment deployment obligations are not changing due to CAP, and CAP-related requirements specific to EAS encoders and decoders are incorporated into the Part 11 sections addressing these devices (specifically, sections 11.32 and 11.33).[328] However, as indicated above, we are allowing EAS Participants to deploy intermediary devices to meet their CAP-related obligations. As the tables in section 11.11 already require deployment of EAS decoders, a reference to intermediary devices (which are stand-alone equipment in their own right) is required for consistency. We also are deleting the date references in the equipment deployment tables in section 11.11 (as well as cross-references to these dates in other sections of Part 11, such as section 11.51(c) and (d)), along with the entry for two-tone encoders. This action also is required for consistency and has support in the record.

110. Finally, we sought comment in the *Third FNPRM* on whether we should incorporate monitoring requirements or references thereto into section 11.11.[329] No party addressed this issue directly, and we conclude that incorporating references to section 11.52 in section 11.11 is unnecessary. As we explained in the *Third FNPRM*, decoders already are required to meet the monitoring requirements in section 11.52, which we are amending to include CAP monitoring.[330] Accordingly, the basic requirement to deploy a decoder (or intermediary device) necessarily triggers CAP monitoring obligations.

111. *Section 11.20*. Section 11.20 generally describes the functions and architectural elements of state relay networks.[331] Among other things, this section provides that state relay networks distribute "State EAS messages" and may be composed of "any ... communications facilities" and that "any ... communications technology may be used to distribute State emergency messages."[332] As we explained in the *Third FNPRM*, CSRIC and parties responding to the *Part 11 Public Notice* suggested revising the language in section 11.20 to include CAP sources and the relay of CAP alerts via state CAP relay networks.[333] Accordingly, we sought comment on whether the existing language of section 11.20 requires a specific reference to CAP in light of the fact that its language broadly covers "EAS messages," which could be in the SAME or CAP formats and distributed over "any" communications facility or

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[326] Trilithic Comments at 9.

[327] BWWG Comments at 29.

[328] *See Third FNPRM*, 26 FCC Rcd 8149, 8177, para. 64.

[329] *See id.*, para. 66.

[330] *See id.*

[331] *See* 47 C.F.R. § 11.20.

[332] *Id.*

[333] *See Third FNPRM*, 26 FCC Rcd 8149, 8178, para. 68.

technology.[334] We also sought comment on whether we need to incorporate CAP monitoring into section 11.20.[335]

112. The majority of commenters addressing this issue appeared to agree that CAP transmission should be incorporated into section 11.20. BWWG observed, "While the language does seem to cover all authorized EAS modes, it seems to the BWWG that CAP should be mentioned into this section so there is no doubt or uncertainty."[336] RERC-TA responded, "From the perspective of people with disabilities, adding CAP state relay networks would be beneficial, because ... the conversion to SAME entails a loss of accessibility."[337] Monroe asserted that "the language of section §11.20 should be amended to provide State Relay Networks with the option of distributing EAS messages in CAP and/or legacy EAS format."[338] NAB generally supported CSRIC's recommendation.[339] TFT and Sage, on the other hand, stated that issues of CAP monitoring and distribution should be left to the State EAS Plans.[340]

113. *Decision*. We conclude that no changes to section 11.20 are necessary to accommodate the distribution of CAP messages. Specifically, we conclude that the language in section 11.20 is broad enough to encompass EAS messages originated in CAP format, to the extent that a given state relay network is capable of distribution of that state's EAS alerts in CAP. We agree with RERC-TA that alerts delivered over CAP-based alerting networks are potentially fully accessible to people with disabilities. As we discuss in section II.F(6) of this order, we are requiring EAS Participants to display any enhanced text that an alert initiator supplies in a CAP alert in part as an incentive for state and local alert message originators to deploy and use CAP-based alert systems. Although we believe that providing state and local alert message originators with a conduit for the transmission of fully accessible alerts should facilitate alert originators' compliance with the CVAA[341] and otherwise encourage alert originators to craft messages that will provide accessible alerting for persons who are sight-impaired or hard of hearing, requiring states to do so is beyond our purview. It is up to each state to determine whether to deploy a CAP-based relay network. Moreover, we do not wish to predetermine the manner in which a particular state may construct its relay network to distribute CAP messages. We agree with Sage's recommendation that "the FCC not over specify the way that stations receive state or local messages, but instead defer to a state [EAS] plan."[342] Accordingly, we will not alter section 11.20, and thus there should not be any costs associated with this decision. .

114. *Section 11.21(a)*. Section 11.21 generally specifies the contents of State and Local Area EAS Plans and the FCC Mapbook.[343] Among other things, section 11.21(a) indicates that such plans should identify the "monitoring assignments and the specific primary and backup path for the EAN from

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[334] *See id.*

[335] *See id.*, para. 69.

[336] BWWG Comments at 30.

[337] RERC-TA Comments at 13.

[338] Monroe Comments at 26.

[339] NAB Comments at 19.

[340] TFT Comments at 3; Sage comments at 13-14.

[341] *See infra* note 782783 for a more detailed discussion on the requirements of the CVAA.

[342] Sage Comments at 14.

[343] *See* 47 C.F.R. § 11.31(a)-(c).

the PEP to each station in the plan."[344] In the *Third FNPRM*, we explained that, with respect to this section, CSRIC recommended that we "[i]nclude language on EAN distribution via IPAWS."[345] We tentatively concluded that we should revise the language in section 11.21(a) to make clear that the State EAS Plans specify the monitoring assignments and the specific primary and backup path for SAME-formatted EANs and that the monitoring requirements for CAP-formatted EANs are set forth in section 11.52.[346] We sought comment on this tentative conclusion.[347] TFT responded that "CAP distribution and assignment should be a function of a State Plan with default to IPAWS-OPEN."[348]

115. In the *Third FNPRM*, we also explained that the State EAS Plan requirements in sections 11.21(a) (and 11.55(a)) specifying the obligation to process CAP-formatted messages initiated by state governors fail to specify that the obligation applies to CAP-formatted messages.[349] We tentatively concluded that we should amend the text of both sections to make clear that they apply to CAP-formatted EAS messages and sought comment on this tentative conclusion.[350] All commenters addressing this issue agreed with our tentative conclusion.[351]

116. *Decision*. We are amending section 11.21(a) to make clear that the State EAS Plans specify the monitoring assignments and the specific primary and backup path for SAME-formatted EANs and that the monitoring requirements for CAP-formatted EANs are set forth in section 11.52. We do not know what role, if any, state alerting systems may play in disseminating CAP-formatted EANs in the future. Accordingly, we also include language that to the extent a state may distribute CAP-formatted EANs to EAS Participants via its state alerting system, its State EAS Plan must include specific and detailed information describing how such messages will be aggregated and delivered, just as it must for state CAP-formatted non-EAN messages. This requirement is closely related to what SECCs and LECCs already do to draft state EAS plans, so the cost in time and resources should be *de minimis*. The benefit to the public from this requirement will be significant because State EAS plans drafted pursuant to this revised rule will clearly indicate the path that an EAN will take within a particular state, thus providing data that will allow the Commission, FEMA or the individual state to conduct meaningful EAS tests.

117. With respect to clarifying in section 11.21(a) (and 11.55(a)) that the mandate to process gubernatorial alerts applies to CAP alerts, this issue has become moot in light of our decision to eliminate the obligation that EAS Participants receive and process CAP-formatted gubernatorial alerts. However, detailed information describing how state-originated CAP-formatted messages will be aggregated and distributed to EAS Participants, including applicable monitoring requirements, must be detailed in the State EAS Plans, just as the equivalent information for SAME-formatted alerts always has been. We are amending section 11.21(a) to make this clear.

118. *Section 11.21(c)*. Section 11.21(c) defines the FCC Mapbook, specifying that it is based upon the State and Local Area EAS plans and "organizes all broadcast stations and cable systems

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[344] 47 C.F.R. § 11.31(a). EAS Participants are required to monitor the stations identified in the state plan for federal EAS message purposes under sections 11.52(d) and 11.54(b)(1), 47 C.F.R. §§ 11.52(d), 11.54(b)(1).

[345] *See Third FNPRM*, 26 FCC Rcd 8149, 8178-79, para. 71 (*citing CSRIC Final Report*, § 5 .1).

[346] *See id.* at 8179, para. 72.

[347] *See id.*

[348] TFT Comments at 4.

[349] *See Third FNPRM*, 26 FCC Rcd 8149, 8179, para. 73.

[350] *See id.*

[351] *See* Monroe comments at 26; BWWG comments at 31-32; Timm comments at 3.

according to their State, EAS Local Area, and EAS designation."[352] We sought comment in the *Third FNPRM* on whether and, if so, how we should revise these requirements to identify federal and state CAP message origination and distribution.[353] We also asked whether State and Local EAS Plans are sufficiently specific or reliably updated at sufficiently regular intervals to be accurately reflected in the latest version of the FCC Mapbook.[354] We sought comment on whether the FCC Mapbook should provide a simple representation of how EANs are distributed from the PEP/NP stations to the PN/NN stations within a state as opposed to a list of each individual station within the state.[355] We observed that any State EAS Plan drafted in this manner would lack the data to enable the Commission to assemble a mapbook beyond the LP level and would not include information concerning many EAS Participants, including all cable providers.[356] We received various comments addressing these issues.[357]

119. *Decision*. We defer taking any action on this issue until, at a minimum, we have completed our review of the test data we will be receiving from EAS Participants as a result of the November 9, 2011, Nationwide EAS Test.[358]

120. *Section 11.31(a)(3)*. Section 11.31(a) specifies the components of an EAS message that comprise the EAS Protocol.[359] Section 11.31(a)(3) states that the actual message "may be audio, video or text."[360] As we explained in the *Third FNPRM*, TFT, responding to the *Part 11 Public Notice*, had asserted that "the provision for video or text in [section 11.31(a)(3)] is no longer necessary" because "CAP messages have the ability to contain video, audio, graphics and text [and] CAP receiving equipment may (optionally) have additional features such as text-to-speech."[361] We sought comment on TFT's proposal, which appeared to be premised upon changing the EAS Protocol to accommodate CAP's capabilities.[362] TFT commented, "Rather than change the EAS protocol, flexibility should be permitted to display visually elements in a CAP-encoded message if those elements are available."[363] No other commenter directly addressed this issue.

121. *Decision*. As we indicate above, in this order, we are not altering the EAS Protocol or the EAS generally but instead are establishing rules to enable a CAP-formatted message to be converted into the EAS Protocol for transmission over the current EAS architecture. As we explain in section IV.B(5) of

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[352] 47 C.F.R. § 11.21(c).

[353] *See Third FNPRM*, 26 FCC Rcd 8149, 8179-80, para. 74.

[354] *See id.*

[355] *See id.* at 8180, para. 75.

[356] *See id.*

[357] *See, e.g.*, BWWG Comments at 32; Timm Comments at 3-4; NCTA Comments at 12-13.

[358] As we observed in the *Third FNPRM*, the *National Test Order* required EAS Participants to submit various test data to the Commission, including identification of the monitored station whose EAS broadcast was decoded, which might aid in preparing accurate information on EAS monitoring assignments. *See Third FNPRM*, 26 FCC Rcd 8149, 8180, para. 75 (*citing* the *National Test Order*).

[359] *See* 47 C.F.R. § 11.31(a).

[360] *Id.* § 11.31(a)(3).

[361] *See Third FNPRM*, 26 FCC Rcd 8149, 8180-81, para. 77 (*citing* TFT, Inc., Comments, EB Docket 04-296 (filed June 11, 2010) at 4).

[362] *See id.*

[363] TFT Comments at 4.

this order, we are also amending the requirements in sections 11.51(d), (g)(3), (h)(3), and (j)(2) to require EAS Participants to make full use of the rich text data in the CAP message to create the video crawl. However, such enriched text will only be available to viewers of EAS Participants that receive the CAP version of the message, as this text cannot be encoded for further distribution in the EAS Protocol format. Accordingly, the language in section 11.31(a)(3) limiting the EAS Protocol message to audio, video, or text remains valid.[364] As our decision does not alter our rules or the EAS protocol, there should not be any costs associated with it.

122. *Section 11.35(a).* Section 11.35(a) specifies certain operational readiness requirements for EAS equipment.[365] This section currently requires, among other things, that EAS Participants install EAS equipment so that the monitoring and transmitting functions are available during the times that the EAS Participants' stations and systems are in operation, that EAS Participants determine the cause of any failure to receive the required tests or activations during tests, and that EAS Participants make appropriate log entries indicating reasons why they did not receive any tests.[366] We explained in the *Third FNPRM* that CSRIC had recommended that we update this section "to include the CAP receiving requirement."[367] We tentatively concluded that it is unnecessary to include a CAP-receiving requirement in section 11.35(a) because the obligation to receive CAP is specified in 11.56, and we proposed to include this as a minimum requirement in several other rule sections as well.[368] We sought comment on this tentative conclusion.[369]

123. Two parties addressed this issue. BWWG agreed with our tentative conclusion.[370] Monroe, on the other hand, states: "At a minimum, it should be specified that CAP EAS encoder/decoders fall under the same requirements of §11.35(a), (b) and (c)."[371] Monroe added, "to the extent that intermediary devices are permitted, it is unclear why they would or should be exempt from the operational readiness requirements set forth under §11.35, as their role as and EAS encoder (certified or not) would represent a critical vulnerability and potential point of failure."[372]

124. *Decision*. We are amending sections 11.35(a) and (b) to clarify that these subsections apply to all equipment used as part of the EAS, including all equipment that performs the functions of decoding and encoding messages formatted in the EAS Protocol and the Common Alerting Protocol. We observe that sections 11.35(a) and (b) apply to EAS Encoders and Decoders and have terms that are broad enough to capture both integrated CAP-capable EAS devices as well as intermediary devices. However, we are clarifying the language in these sections to remove any ambiguity on this issue. Because this amendment does not alter EAS Participants' underlying obligations, any costs associated with our decision should be minimal.

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[364] As we explained in the *Third FNPRM*, in practice, only audio is sent. *See Third FNPRM*, 26 FCC Rcd 8149, 8154-55, note 29.

[365] *See* 47 C.F.R. § 11.35(a).

[366] *See id.*

[367] *See Third FNPRM*, 26 FCC Rcd 8149, 8181, para. 78 (*citing CSRIC Final Report*, § 5.1).

[368] *See id.*

[369] *See id.*

[370] *See* BWWG comments at 33.

[371] Monroe Comments at 26.

[372] *Id.*

125. *Section 11.45*. Section 11.45 prohibits false or deceptive EAS transmissions.[373] This section specifies that "[n]o person may transmit or cause to transmit the EAS codes or Attention Signal, or a recording or simulation thereof, in any circumstance other than in an actual National, State or Local Area emergency or authorized test of the EAS."[374] We explained in the *Third FNPRM* that CSRIC had recommended that we "[m]odify [the] Prohibition to reference CAP 'Actual' status indicators" and noted that the "actual" status for CAP messages is defined in the ECIG Implementation Guide.[375] We observed that if all EAS Participants are required to translate CAP-formatted messages pursuant to the ECIG Implementation Guide, any restrictions in the ECIG Implementation Guide against broadcasting CAP-formatted messages would apply.[376] We also observed that the language of section 11.45 prohibiting false or deceptive EAS transmissions applies regardless of whether such transmissions were initiated by a CAP-formatted message or a SAME-formatted message.[377] We sought comment on whether we should make any revisions to section 11.45 to accommodate CAP-formatted messages.[378]

126. We received little comment on this issue. Monroe stated, "We feel that it may make sense to revise or expand section §11.45 to accommodate CAP-formatted messages."[379] BWWG stated, "To the knowledge of the BWWG, there have never been any intentionally false EAS transmissions," adding that "[t]he errors that we do know about that are also well known to all EAS subject experts are origination problems in the emergency management domain."[380] Accordingly, BWWG noted that it "saw no need for further prohibitions."[381]

127. *Decision*. We decline to adopt CSRIC's recommendation to revise section 11.45 to prohibit CAP messages lacking "Actual" status indicators. As we observed in the *Third FNPRM*, the language in section 11.45 already broadly prohibits the transmission of the EAS codes or attention signal "in any circumstances other than in an actual National, State or Local area emergency."[382] This language is sufficiently broad to encompass EAS codes and attention signals generated from the receipt of a SAME-formatted or CAP-formatted message.[383] In addition, the ECIG Implementation Guide – with which we require conformance for CAP-to-SAME conversion – requires that CAP messages have an "ACTUAL" status indicator for EAS activation.[384]

128. *Section 11.51*. Section 11.51 specifies EAS code and Attention Signal transmission requirements.[385] This section currently lists, among other things, certain basic encoder requirements for

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[373] *See* 47 C.F.R. § 11.45.

[374] *Id.*

[375] *See Third FNPRM*, 26 FCC Rcd 8149, 8181, para. 79 (*citing CSRIC Final Report*, § 5.1).

[376] *See id.* (*citing* ECIG Implementation Guide, §§ 3.9, 4).

[377] *See id.*

[378] *See id.*

[379] Monroe Comments at 26. *See also* Timm Reply Comments at 5-6.

[380] BWWG comments at 34.

[381] *Id.*

[382] *See Third FNPRM*, 26 FCC Rcd 8149, 8181, para. 79 (*citing* 47 C.F.R. § 11.45).

[383] *See* 47 C.F.R. § 11.45.

[384] *See* ECIG Implementation Guide, §§ 3.9, 4.

[385] *See* 47 C.F.R. § 11.51.

the various classes of EAS Participants.[386] For example, sections 11.51(g)(1), (h)(1), (i)(1), and (j)(1) require that the applicable EAS Participants must, among other things, "install, operate, and maintain equipment capable of generating the EAS codes."[387] In the *Third FNPRM*, we explained that CSRIC had recommended changing this language to state that "[e]quipment must be capable of rendering a CAP compliant message to EAS[,] [a]s opposed to simply generating an EAS code."[388] Assuming that by "rendering," CSRIC meant "encoding" a CAP-formatted message – and in light of our transitional approach, under which EAS Participants would not be required to encode EAS messages in the CAP format – we tentatively concluded that we should not adopt CSRIC's recommendation and sought comment on this tentative conclusion.[389] As we discuss above, commenters indicated that CSRIC's use of the term "render" did not mean to "encode" the CAP message but rather to "convert" it into a SAME-compliant message.[390]

129. *Decision*. We adopt the tentative conclusion in the *Third FNPRM*. To the extent CSRIC meant to revise section 11.51 to ensure conversion of CAP messages into SAME-compliant messages, we are incorporating that requirement in section 11.56. This is a fundamental requirement that will be cross-referenced in other sections of Part 11. In addition, as we are not changing the basic output requirements in section 11.51, including the requirements to generate EAS header codes under our transitional approach, any costs associated with our decision should be minimal.

130. Sections 11.51(d), (g)(3), (h)(3), and (j)(2) establish when EAS Participants must transmit visual EAS messages – typically aired in the form of a video crawl – and requires that such messages contain the originator, event, location, and the valid time period of the EAS message.[391] As explained in the *Third FNPRM*, parties responding to the *Part 11 Public Notice* had recommended that we allow EAS Participants to derive the visual message from the pertinent fields within the CAP message, rather than the EAS header codes.[392] These parties observed that the CAP data allowed for more descriptive alert information than the EAS header codes.[393]

131. In the *Third FNPRM*, we proffered a tentative view that during the interim period until the Next Generation EAS is fully implemented, the message that EAS Participants transmit to the public should be uniformly consistent whether it is originated in SAME or CAP, to avoid any possible confusion that might result if EAS Participants affected by the same alert displayed differing video crawls.[394] We sought comment on whether we should continue to use the SAME-based protocol codes as the baseline for deriving the visual EAS message requirements in section 11.51.[395] We asked, for example, whether there would be any potential for confusion if the viewers in one area were presented with a video crawl developed from an EAS message received and formatted in SAME, while viewers in another area were presented with a video crawl developed from the identical EAS message received and formatted in

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[386] *See id.*

[387] *See* 47 C.F.R. § 11.51(g)(1), (h)(1), (i)(1), (j)(1).

[388] *See Third FNPRM*, 26 FCC Rcd 8149, 8181-82, para. 80 (*citing CSRIC Final Report*, § 5.1).

[389] *See id.* at 8182, para. 81.

[390] See supra para. 79.

[391] *See* 47 C.F.R. § 11.51(d), (g)(3), (h)(3), (j)(2).

[392] *See Third FNPRM*, 26 FCC Rcd 8149, 8182, para. 82.

[393] *See id.*

[394] *See id.* at 8182-83, para. 83.

[395] *See id.* at 8183, para. 85.

CAP.[396] We also asked whether there would be any likelihood of such an occurrence, given that (i) the default for processing identical SAME- and CAP-formatted EAS messages under the ECIG Implementation Guide is to process the CAP-formatted message;[397] and (ii) the restriction against processing duplicate messages.[398]

132. Every commenter addressing this issue opposed our tentative conclusion and instead favored allowing EAS Participants to construct the video crawl from the enhanced text in CAP per the ECIG Implementation Guide. Sage, for example, contended that "Part 11 should permit the best information available to be presented to the audience, and not [the] lowest common denominator EAS message."[399] According to Sage, "The advantage to the public of allowing the TV station to air either CAP or EAS+CAP far outweighs any desire to have viewers of one station see the same message as would the viewers of a station that did not receive the CAP message, or that used an Intermediate device that could not generate the CAP crawl."[400]

133. Citing CAP's capacity to convey text beyond that which is technically practical under the EAS Protocol, Monroe supported following the visual display procedures in the ECIG Implementation Guide, which Monroe observed "describes the method already adopted by industry and FEMA for constructing the alert display text."[401] Trilithic endorsed substituting the CAP text for the text derived from the EAS header codes, arguing that "[t]he EAS Protocol Translation text has long been a blemish in Emergency messaging," further asserting that "[i]n many instances (particularly Amber alerts) this text is close to useless."[402] Trilithic also observed that "TV Broadcasters are required to provide the same information in both the audio and video portions of their programming, and CAP text finally provides a mechanism for this."[403] Trilithic argued, "While uniformity is extremely important, providing useful information to the hearing impaired is far more important."[404] Trilithic maintained that "the requirement to display a translation of the EAS Protocol Text should be dropped for messages received in CAP format," on grounds that such requirement "shortens the usable length of the more useful CAP text, and (assuming the CAP text is allowed) delays the presentation of that text to the viewer."[405]

134. Similar to Trilithic, Timm argued that section 11.51 "should be amended to allow the substitution of the CAP-derived text, when available, in place of the Header Code derived text."[406] Regarding potential confusion from some stations scrolling the CAP-derived text and others scrolling text derived from the EAS header codes, Timm asserted that "the most confusion currently created in EAS is

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[396] *See id.*

[397] *See id.* (*citing* ECIG Implementation Guide, § 3.11, which provides that "If a CAP-to-EAS device receives an alert in the EAS domain, and it has a duplicate alert that has been received via CAP, but neither has yet aired, it SHOULD use the CAP version of the alert.").

[398] *See id.* (*citing* 47 C.F.R. § 11.33(a)(10)).

[399] Sage Comments at 15.

[400] *Id.*

[401] Monroe Comments at 23-24.

[402] Trilithic Comments at 9.

[403] *Id.*

[404] *Id.*

[405] *Id.*

[406] Timm Comments at 4. *See also* BWWG Comments at 35.

when the Header Code derived message scrolls an evacuation or other warning as being for an entire county when the audio message is saying it is only for a small portion of the county."[407] Timm maintained that requiring the CAP-derived text to scroll after the text derived from the EAS header codes (as specified in the ECIG Implementation Guide) "wastes valuable limited presentation time and truncates the more precise CAP-derived text."[408]

135. NAB asserted that "visual messages developed from a legacy SAME-formatted message should serve as the baseline amount of information broadcast to viewers, but that no restrictions should be placed on an EAS Participant's optional delivery of additional alert-related information in the event a participant has the ability to encode a CAP-formatted message."[409] According to NAB, "From a pragmatic standpoint, it makes little sense to prevent the public from receiving video crawls containing enhanced emergency information, such as evacuation routes, street-by-street closings, car descriptions for AMBER Alerts, etc., should their EAS Participant be capable of delivering such content."[410] NAB also asserted that "concerns about potential confusion among viewers are easily overcome by the public benefits of providing better, more descriptive emergency warning visual crawls wherever possible, even if some measure of consistency must be sacrificed."[411] Google agreed with other commenters "that the benefits of permitting and encouraging transmission of the CAP-enhanced video crawl (per the ECIG Implementation Guide) outweigh the risk of confusion," further arguing that "[d]issemination of accurate and useful information to the public must be the first priority."[412]

136. The Wireless RERC also maintained that EAS Participants should be allowed to create the video crawl from the enhanced text in the CAP message.[413] Specifically, the Wireless RERC recommended "that the Commission permit and encourage the following or similar language 'If an EAS participant transmits an EAS text message that has been constructed from a received CAP message, the EAS participant can also transmit any text from the received CAP message that provides additional information beyond the required EAS protocol elements.'"[414] The Wireless RERC added, "The additional text relating to the emergency alert would allow for more description which is highly important to those persons with hearing limitations."[415] The Wireless RERC also recommended that "[i]f the received CAP message contains audio, then the EAS participant can use speech to text conversion to provide the additional text information."[416] The Wireless RERC asserted, "the risk of confusing different segments of the public due to a crawl from one EAS participant (developed from a CAP message) having more information than a crawl from another EAS participant (developed from an EAS protocol message) is far outweighed by the importance of providing all of the available information about an emergency to the public, especially to people with disabilities."[417]

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[407] Timm Comments at 4. *See also* BWWG Comments at 36.

[408] Timm Comments at 4.

[409] NAB Comments at 21.

[410] *Id.*

[411] *Id.*

[412] Google Reply Comments at 3 (*footnote omitted*).

[413] Wireless RERC Comments at 5.

[414] *Id.*

[415] *Id.*

[416] *Id.*

[417] *Id.*

137. The RERC-TA noted, "Having more detailed information than what EAS/SAME currently allows in the video crawl would be a boon for people who are deaf or hard of hearing, because it would – if enough information is included in the crawl – free them up from having to obtain additional information through other channels."[418] The RERC-TA also acknowledged "the potential for confusion and the risk of duplicate broadcasts if extra information is made available through the CAP-specific fields in an emergency alert" but maintained that "this drawback is outweighed by the resulting immediate accessibility improvements for everyone except people who are deaf-blind."[419] The RERC-TA added, "Improved access results in more lives saved, which should trump all other considerations."[420]

138. *Decision*. We are persuaded by the many commenters that favor more comprehensive use of CAP to make EAS alerts more fully accessible. We are thus amending sections 11.51(d), (g)(3), (h)(3), and (j)(2) of the Commission's rules to require EAS Participants to derive the visual display elements, including the originator, event, location and the valid time period of the EAS message, from the CAP text data as described in section 3.6 of the ECIG Implementation Guide. As we observed in the *Third FNPRM*, the ECIG Implementation Guide provides procedures for deriving the video crawl translation of a CAP-formatted message to include not only the EAS codes required under the Part 11 rules, but also additional text relating to the event, which we believe would provide more visual information to alert message viewers.[421] The utility of such additional text has never been in question. For example, the ability to provide additional descriptive information will make alerts more focused, which could be vitally important for Amber alerts and other alerts that require more specific information than the basic who, what, when and where that EAS codes provide.[422] CAP alert originators will also be able to include in alerts suggested actions to avoid or prepare for the emergency condition; identify URLs and other sources of additional information; or provide a textual translation of the audio portion of a message, which would be particularly beneficial to the deaf and hard of hearing community.[423]

139. We are also persuaded by the comments that our concern expressed in the *Third FNPRM* regarding the potential for confusion that might arise if stations serving the same geographic area displayed differing video crawls (one based on the SAME elements only and the other based on the enhanced CAP text) is outweighed by the benefit that the enhanced text provides.[424] We observe that such scenarios would arise only when one (or more) of the stations in the geographic area affected by the emergency loses its ability to receive CAP messages but continues to receive over-the-air SAME messages. In addition, as Monroe observed, the ECIG Implementation Guide procedure for displaying enhanced CAP text has already been adopted by the industry and FEMA.[425] Requiring display of enhanced CAP text will provide an incentive for state and local alert message originators to deploy and use CAP-based alert systems and integrate such CAP systems with the EAS and FEMA's IPAWS system. Finally, we do not believe there are any significant costs associated with this requirement. As we note above, the capability to provide the text field is inherent in CAP and explicitly provided for in the ECIG

[418] RERC-TA Comments at 13.

[419] *Id.* at 14.

[420] *Id.*

[421] *See Third FNPRM*, 26 FCC Rcd 8149, 8183, para. 84 (*citing* ECIG Implementation Guide, § 3.6.4).

[422] *See* Trilithic Comments at 9; NAB Comments at 21.

[423] As explained in the ECIG Implementation Guide, scrolls are limited to 1,800 characters. *See* ECIG Implementation Guide, § 3.6.4.4.

[424] *See, e.g.*, Sage Comments at 15; RERC-TA Comments at 14; Wireless RERC Comments at 5; Google Reply Comments at 3; Timm Comments at 4; NAB Comments at 21; BWWG Comments at 36.

[425] *See* Monroe Comments at 23-24.